

R E M A R K S

Claims 1, 6, 7, 9 and 11 to 16 as set forth in Appendix II of this paper are currently pending in this case. Claims 8 and 10 have been canceled, Claims 1, 9 and 11 have been amended, and Claims 14 to 16 have been added as indicated.

Accordingly, applicants have revised Claim 1 to bring out that the polymer is present in the hair treatment composition in amounts which convey film-forming properties<sup>1)</sup>. Claim 9 has been revised to better distinguish the enumerated components of the composition and the constituents of the polymer set forth in Claim 1. Accordingly, applicants have replaced "a)" through "f)" in Claim 9 by --i)-- though --ii)---. Claim 11 and page 26 of the application have been revised correspondingly. On page 26 of the application, applicants have also revised subsection ii) (*formerly subsection b)*) to include literal support for the preferred weight percentage of from 40 to 99% as set forth in original Claim 9 and currently the subject matter of Claim 11. New Claims 14 to 16 have been added to further bring out some of the subsidiary embodiments of the composition defined in Claim 9 corresponding to Claims 12, 13 and 7, respectively. No new matter has been added.

In light of the foregoing and the attached it is respectfully requested that the objections to Claims 1 and 11 be withdrawn. Favorable action is respectfully solicited.

In light of the foregoing and the attached, it is further respectfully requested that the rejection of Claim 10 under Section 103(a) based on

- the teaching of *Chevreux et al.* (US 4,717,739);
  - the teaching of *Zanotti-Russo* (US 6,140,435),
  - the teaching of *Mori et al.* (JP 01/213221) when taken in view of the disclosure of *Yamamoto et al.* (JP 03/206024), and
  - the teaching of *Chen et al.* (WO 97/00664),
- and the rejection of Claim 8 under Section 103(a) based on
- the teaching of *Zanotti-Russo* (US 6,140,435),
  - the teaching of *Mori et al.* (JP 01/213221) when taken in view of the disclosure of *Yamamoto et al.* (JP 03/206024), and

1) The respective clarification is supported by applicants' disclosure on page 27, indicated lines 6 to 9, in conjunction with page 1, indicated lines 8 and 9, of the application.

be withdrawn. Favorable action is respectfully solicited.

The Examiner has rejected Claims 1, 6, 7, 9 and 11 to 13 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of **Zanotti-Russo** (US 6,140,435) which relates to copolymers which comprise, as monomer units<sup>2)</sup>,

- from about 10 to about 97% by weight of ethylenically unsaturated mono- or dicarboxylic acids<sup>3)</sup>;
- from 0 to about 80% by weight of C<sub>1</sub>-C<sub>20</sub>-alkyl ester of ethylenically unsaturated mono- or dicarboxylic acids<sup>4)</sup>;
- from 0.5 to 80% by weight of an ester<sup>5)</sup> of formula



wherein

A is an ethylenically unsaturated acrylic residue, optionally containing an additional carboxylic acid group which is optionally esterified with a C<sub>1-20</sub>-alkyl group;

R<sub>1</sub> is an alkyl, alkylphenyl or aralkyl group of 1 to 30 carbon atoms;

x is 0 to 50 and

y is 0 to 30;

- from 0 to about 20% by weight of at least one ethylenically unsaturated amide,
- from about 0.2 to about 20% by weight of at least one particular diester as crosslinking agent, and
- from 0 to about 20% of at least one ethylenically unsaturated sulfonic acid.

**Zanotti-Russo** further teach that the respective copolymers exhibit thickening and suspending properties in aqueous systems including inter alia cosmetic compositions<sup>6)</sup>.

The Examiner concedes that "Zanotti-Russo does not teach expressly the particular amounts of each and every component in the copoly-

2) Note col. 2, indicated line 44, to col. 3, indicated line 9, of US 6,140,435.

3) Units corresponding to such carboxylic acids are present in the film-forming polymer of applicants' composition in from 10 to 30% by weight; see applicants' constituent (b).

4) Units corresponding to tert.-butyl esters of ethylenically unsaturated monocarboxylic acids are present in the film-forming polymer of applicants' composition in from 45 to 85% by weight; see applicants' constituent (a).

5) Units corresponding to polyether esters of ethylenically unsaturated monocarboxylic acids are present in the film-forming polymer of applicants' composition in from 1 to 20% by weight; see applicants' constituent (c).

6) For example, col. 2, indicated lines 7 to 42, of US 6,140,435.

ers, or the employment of *t*-butyl acrylate ..." but takes the position that *Zanotti-Russo*'s disclosure establishes a case of *prima facie* obviousness because of the overlap in the weight percentages of the monomers employed to prepare the polymers, relying on explanations concerning "Overlap of Ranges" which are provided in MPEP §2144.05 and on holdings of the courts referenced therein. The Examiner's position, and the Examiner's application of MPEP §2144.05 and decisions referenced therein, is not deemed to be well taken. The referenced section of the MPEP as well as the decisions relied upon by the Examiner relate to physical mixtures or properties rather than ranges of starting materials employed in the preparation of distinct chemical compounds<sup>7)</sup>. Where chemical compounds are concerned, it is well settled that the fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness<sup>8)</sup>. Also, the mere fact that the prior art could be modified so as to arrive at applicants' invention does not suffice to render such a modification *prima facie* obvious unless the prior art suggests the desirability of the specific modification which is necessary to arrive at the claimed subject matter<sup>9)</sup>. To establish that applicants' invention is *prima facie* obvious within the meaning of Section 103(a) it is necessary that the prior art which discloses the genus, or an additional teaching, provides an incentive or a motivation for a person of ordinary skill to select, *inter alia*, the particular starting monomers in the special amounts as is necessary to arrive at the polymer which is present in applicants' composition. Moreover, as explained by the Court in *In re Antonie* the "invention as a whole" which is referenced in 35 U.S.C. 103(a) encompasses the properties which are inherent in the claimed subject matter<sup>10)</sup>:

*In determining whether the invention as a whole would have been obvious under 35 U.S.C. 103, we must first delineate the inven-*

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- 7) In *In re Wertheim* the overlapping range concerned the solids content of a mixture employed in a freeze drying process; in *In re Woodruff* the overlapping ranges concerned a mixture of *inter alia* O<sub>2</sub> and CO as well as a temperature range; in *In re Geisler* the overlapping ranges concerned the thickness of a protective layer.
  - 8) *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (CAFC 1994); *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (CAFC 1992); *In re Deuel*, 51 F.3d 1552, 1559, 34 USPQ2d 1210, 1215 (CAFC 1995).
  - 9) ie. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (CAFC 1984); see also, eg., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (CAFC 1985); *In re Grabiak*, 769 F.2d 729, 226 USPQ 870 (CAFC 1985); *In re Sernaker*, 702 F.2d 989, 217 USPQ 1 (CAFC 1983).
  - 10) *In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977); emphasis original.

tion as a whole. In delineating the invention as a whole, we look not only to the subject matter which is literally recited in the claim in question... but also to those properties of the subject matter which are inherent in the subject matter and are disclosed in the specification... Just as we look to a chemical and its properties when we examine the obviousness of a composition of matter claim, it is this invention as a whole, and not some part of it, which must be obvious under 35 U.S.C. 103.

To render applicants' invention as a whole obvious within the meaning of Section 103(a), the prior art therefore also needs to suggest or imply that the copolymers which are generically taught, or the particular group of those copolymers which is referenced in applicants' claims, exhibit film-forming properties.

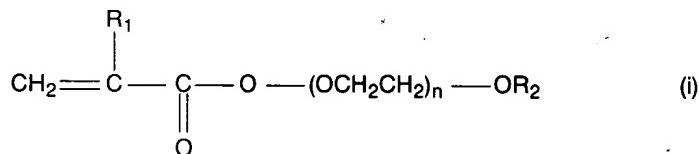
On the one hand, the teaching of **Zanotti-Russo** fails to suggest the selection of the particular starting monomers in the specific amounts as is necessary to arrive at the polymer which characterizes applicants' composition. On the other hand, the teaching of **Zanotti-Russo** also fails to suggest or imply that any one of the polymers within the generic disclosure of **Zanotti-Russo** exhibits film-forming properties which render the polymers, and compositions comprising such polymers in film-forming amounts, suitable for setting hair, improving the structure of hair and for styling the hair. A person of ordinary skill in the art could not reasonably expect to arrive at film-forming polymers by varying any one of the monomers and monomer amounts of **Zanotti-Russo**'s copolymers, and applicants' invention as a whole can therefore not be deemed to be rendered *prima facie* obvious under Section 103(a).

For the foregoing reasons the Examiner's position that applicants' invention involves no more than mere routine optimization within the teaching of **Zanotti-Russo** is not deemed to be well taken. On the one hand, an optimization within **Zanotti-Russo**'s disclosure would have to aim at an optimization of the thickening and suspending properties of the polymers in aqueous systems. Since **Zanotti-Russo**'s disclosure is silent as to other properties of the polymers, a person of ordinary skill in the art cannot reasonably be motivated by the teaching of **Zanotti-Russo** to "optimize" the starting materials and their amounts to arrive at film forming polymers. On the other hand, an optimization requires that the person of ordinary skill in the art is reasonably apprised of a particular parameter or parameters which is/are result effective, ie. the parameter(s) which -if changed in a

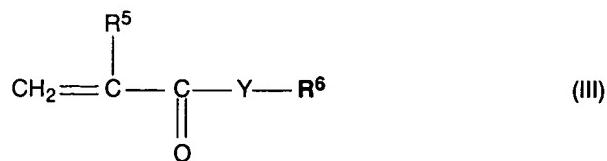
particular manner- provide(s) for the desired result<sup>11)</sup>. The teaching of **Zanotti-Russo** fails to recognize which of the starting monomers are "result-effective" with regard to the thickening and/or suspending action, and -more pertinently- lacks any guidance or suggestion as to which parameters have to be modified in order to arrive at a film-forming polymer. Clearly, more than a mere optimization by way of routine experimentation is required if one wants to arrive at applicants' invention from the teaching of **Zanotti-Russo**. Favorable reconsideration of the Examiner's position and withdrawal of the respective rejection is therefore respectfully solicited.

The Examiner has also rejected Claims 1, 6, 7, 9 and 11 to 13 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of **Mori et al.** (JP 01/213221) when taken in view of the disclosure of **Yamamoto et al.** (JP 03/206024).

In this context, the Examiner inter alia takes the position that the monomer constituents (c) and (d) of applicants' polymer meet the limitations of **Mori et al.**'s (meth)acrylate ester of formula (i)



in which  $R_1$  is H or  $\text{CH}_3$  and  $R_2$  is  $\text{CH}_3$  or  $\text{CH}_2\text{CH}_3$ , which constitutes, according to the teaching of **Mori et al.**, from 30 to 70% by weight of the monomer mixture. Applicants respectfully disagree with the Examiner's interpretation of applicants' constituent (d). In accordance with applicants' definition a monomer (d) is a compound of formula III



in which

$R^5$  is hydrogen or  $\text{C}_1\text{-C}_8$ -alkyl,

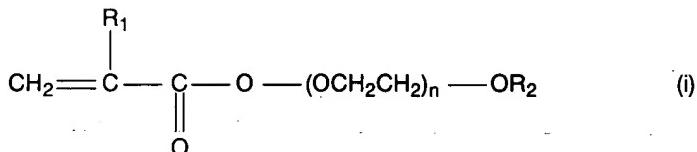
$R^6$  is a straight-chain or branched  $\text{C}_8\text{-C}_{30}$ -alkyl radical, and

$\text{Y}$  is O or  $\text{NR}^7$ , where  $R^7$  is hydrogen,  $\text{C}_1\text{-C}_8$ -alkyl or  $\text{C}_5\text{-C}_8$ -cycloalkyl.

**Mori et al.**'s (meth)acrylate ester of formula (i) clearly lack the straight-chain or branched  $\text{C}_8\text{-C}_{30}$ -alkyl radical  $R^6$  of applicants'

11) *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); see also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

monomer constituent (d). It is therefore not deemed appropriate to say that the requirement of *Mori et al.* that from 30 to 70% of the monomers of formula (i)



be present is met by applicants' polymer because applicants require the presence of from 1 to 20% by weight of the monomer(s) (c) and from 1 to 30% by weight of the monomer(s) (d).

Moreover, *Mori et al.*'s teaching distinctly distinguishes between the monomers of formula (i) and monomers which are C<sub>8-18</sub> alkyl esters of (meth)acrylic acid<sup>12</sup>). In light of *Mori et al.*'s distinction alone it is deemed to be inappropriate to combine applicants' monomer constituents (c) and (d) in an attempt to construe a polymer which is asserted to meet *Mori et al.*'s requirement that from 30 to 70% of the monomers of formula (i) be present in the polymer. As already submitted by applicants, *Mori et al.* specifically state that "If the amount [of the monomer of formula (i)] used is less than 30% by weight, there is poor adhesion to hair, poor luster and the like, and the hair washability deteriorates ..."<sup>13</sup>). The polymer employed in applicants' composition is therefore not only clearly distinguished from the polymers addressed by the disclosure of *Mori et al.* The polymer employed in applicants' composition is also not suggested by *Mori et al.*'s teaching.

Furthermore, a person of ordinary skill in the art would not arrive at the polymer employed in applicants' composition merely by modifying the teaching of *Mori et al.* in light of *Yamamoto et al.*'s disclosure that C<sub>4-8</sub> alkyl (meth)acrylate ester monomers including tert.-butyl methacrylate contribute to the lipophilicity, the softness, and hair-washing properties of the polymer. The respective monomers of *Yamamoto et al.*'s polymer are -based on the chemical structure and the properties associated with the presence of the monomers- equivalents of *Mori et al.*'s monomer constituent (c) which "contributes to the water resistance and softness of the resulting film"<sup>14</sup>). Accordingly, a person of ordinary skill in the art would

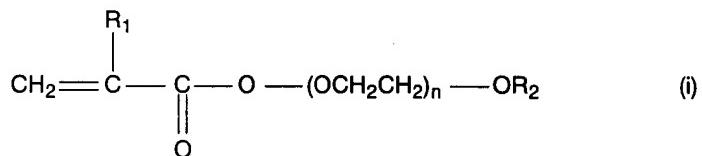
12) Ie. *Mori et al.*'s constituent (c) addressed on page 3, indicated lines 33 and 34, and page 4, indicated lines 23 to 27, of JP 01/213221.

13) Page 4, indicated lines 4 to 6, of JP 01/213221.

14) Page 4, indicated lines 23 and 24, of JP 01/213221.

incorporate the C<sub>4-8</sub> alkyl (meth)acrylate ester monomers such as tert.-butyl methacrylate of Yamamoto et al. in the polymers of Mori et al. in amounts of from 5 to 20% by weight, particularly in light of Mori et al.'s statement that "if more than 20% by weight is used" of those monomers "the film becomes too soft, stickiness is marked and hair washability deteriorates"<sup>15)</sup>. A polymer derived from the teaching of Mori et al. taken in view of the disclosure of Yamamoto et al. would therefore comprise

- from 30 to 70% by weight of Mori et al.'s monomers of formula (i)

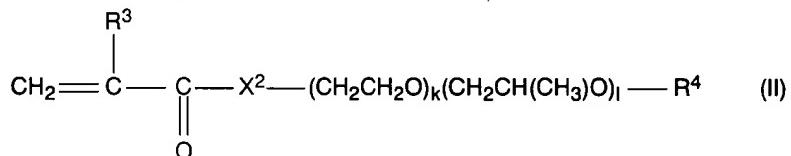


and

- from 5 to 20% by weight of tert.-butyl methacrylate,

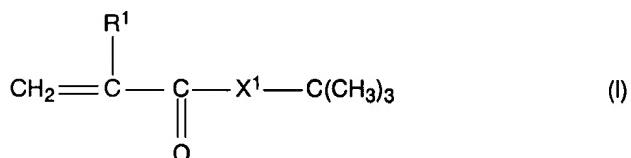
and not, as required in accordance with applicants' invention

- c) from 1 to 20% by weight of at least one compound of applicants' formula II



and

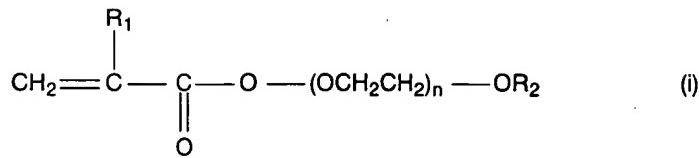
- a) from 45 to 85% by weight of at least one compound of applicants' formula I



Even if the person of ordinary skill in the art who modifies the teaching of Mori et al. in light of Yamamoto et al.'s disclosure were to disregard the functional equivalence of Yamamoto et al.'s C<sub>4-8</sub> alkyl (meth)acrylate ester monomers and Mori et al.'s monomer constituent (c) and were to replace or substitute the monomers (d) of Mori et al.'s polymer by tert.-butyl methacrylate, the resulting polymer still distinctly differs from the polymer employed in applicants' composition because the modified "prior art" polymer comprises

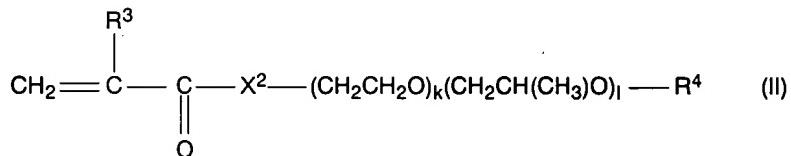
- from 30 to 70% by weight of Mori et al.'s monomers of formula (i)

<sup>15)</sup> Ie. page 4, indicated lines 23 to 27, of JP 01/213221.



and not, as required in accordance with applicants' invention

c) from 1 to 20% by weight of at least one compound of applicants' formula II



In light of the foregoing and the reasons already presented by applicants' in the proceedings to date it is therefore respectfully requested that the rejection under Section 103(a) based on the disclosure of *Mori et al.* when taken in view of the teaching of *Yamamoto et al.* be withdrawn. Favorable action is solicited.

REQUEST FOR EXTENSION OF TIME:

It is respectfully requested that a three month extension of time be granted in this case. A check for the \$950.00 fee is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 11.0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

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Encl.: THE CHANGE(S) IN THE SPECIFICATION (Appendix I)  
THE LISTING OF CLAIMS (Appendix II)

HBK/BAS